

**EDEL 9002: Applied Quantitative Research**  
T 5-7:30 (L125 and C234, along with online component)

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Fall Office Hours: Feel free to stop by without an appointment during these times.

Tuesdays 3:00 – 4:45

Thursdays 3:00 – 4:45

Others by appointment; please email me or call me to arrange another time.

**COURSE DESCRIPTION**

The course focuses on applied statistical methods and analyses. Students read and critically evaluate empirical research; engage in structured class activities to generate quantifiable research questions and hypotheses and analyze data; design original empirical studies related to PK-14 issues; and write research results. Emphasis is on the relationship between research and practice.

**STUDENT LEARNING OUTCOMES**

The student will be able to:

1. Foster professional growth opportunities in educational organizations that is research-based and dedicated to the improvement of teaching and learning.
2. Demonstrate knowledge of research-based models for student learning interventions.
3. Employ a variety of descriptive and inferential research methodologies in investigating the effectiveness of school policies and programs and their impact on student learning.
4. Apply research on the social, emotional and cognitive growth of students and the role of languages and culture to students' academic development and achievement.
5. Demonstrate advanced knowledge of the research literature related to professional practices in education.
6. Conduct a significant applied research study in his/her areas of focus.
7. Publish and present research findings that contribute to the general body of knowledge of instructional leadership and the improvement of student learning and achievement.

**GENERAL INFORMATION**

- All written work must be word processed and submitted to Blackboard (<http://blackboard.csustan.edu>).
- All assignments are due *prior to* the class indicated on the schedule. A 5% reduction of points *per day* will be incurred for late work, up to a maximum 50% reduction. Nothing will be accepted after 5:00 p.m. on December 16.
- No incompletes will be given in the course unless extenuating circumstances (as outlined in the CSU Stanislaus handbook) warrant this grade.
- All work must be your own, with appropriate citations included as necessary. By enrolling in this course, you agree that your graded materials will be submitted to Turnitin.com to review and evaluate for originality and intellectual integrity. A description of the services, terms, conditions of use, and privacy policy of Turnitin.com is available at <http://www.turnitin.com>. All work submitted to Turnitin.com will be added to its database of papers. If the results of the Turnitin.com review support an allegation of academic dishonesty, the coursework in question

as well as supporting materials may be submitted to the Office of Judicial Affairs. The result may be a grade of 0 for the assignment and possibly a grade of F in the course.

- Our 5-6 pm computer lab time each week is important; please make every effort to be prompt.
- Please turn cell phones off during class.
- Participation and attendance will not factor specifically into your grade. However, classes are designed to be interactive and learner-oriented. Missing class or choosing not to participate deprives you from learning opportunities, and it is inconsistent with expectations of professionals enrolled in a doctoral program.
- The reading assignment should be completed before each scheduled class so you are prepared for the content of each session.

### **REQUIRED TEXTBOOKS**

Green, S. B. & Salkind, N. J. (2008). *Using SPSS for Windows and Macintosh*. Upper Saddle River, NJ: Pearson Prentice Hall.

Vogt, W. P. (2007). *Quantitative research methods for professionals*. Boston, MA: Pearson Education.

### **OTHER REQUIRED MATERIAL**

- Storage Media. USB Flash drive recommended (also called Thumb drives and Pen Drives); these are available from any computer, office, or department store. An alternative to a Flash drive is a CD-RW. You are wise to save backups of your EdD coursework in another spot such as Blackboard or your home hard drive.
- Access to Blackboard for links to various electronic articles as part of the required reading assignment each week.

### **GRADED ASSIGNMENTS**

Students are expected to demonstrate a high level of scholarship in all activities and assignments in keeping with the norms of doctoral-level coursework.

#### *Research Proposal (55 points)*

Select a problem related to P-14 education, and design a feasible and meaningful advanced quantitative study that examines this issue; you will not actually carry out the study unless you choose to do so at a later time. Include the following sections in the proposal document:

Introduction, Statement of the Problem, Significance of the Study, Research Questions, Hypotheses (when appropriate), Research Design (includes: Sample, Instruments, Method, and Data Analysis sections), and References. The purpose of the activity is to ensure you can identify a quantitatively analyzed researchable issue, and consider design issues that will provide valid and useful conclusions related to this issue. More details and the scoring rubric are provided in Blackboard.

#### *Group Research Activity (50 points)*

Choose a group of 3-4 total members with which you will examine quantitative research questions and hypotheses derived from existing data related to broad questions in P-14 contexts. The selected research questions should enable you to contribute meaningful information to the field of education. Group members will work together to produce a written research article in the format specified by a group-selected peer-reviewed scholarly journal. The results will also be presented to the class in a format similar to a research session at a professional conference.

You must use existing public data for the assignment. There are links in Blackboard to various online resources; however, the group may choose instead to use other existing data from online resources, books/reports, or an institution. More details and the scoring rubric are provided in Blackboard.

*SPSS Laboratories* (5 points each, 55 points total)

These labs involve applications of course material using SPSS; they primarily will involve data analysis procedures. The labs will be introduced in class with time to begin the assignments in the computer laboratory; time needed to complete each activity will vary for each person. Requirements for each lab will be posted in Blackboard, and answers will also be posted there so you can self-check to ensure full understanding of the material.

*Online Activities* (5 points each, 30 points total)

On the nights when EDEL 9003 (Dr. Borba's class) does not meet, we will meet for three hours. On the opposite weeks when Dr. Borba's class is conducted as a face to face session, we will meet only until 7:15 to allow you to have some time to get food between classes. Because our class sessions will be cut short several times, there will be six online activities throughout the semester to account for the remaining time. Activities will be explained in class and descriptions will be posted in Blackboard. Scoring for each activity will also be explained in Blackboard. Activities may include small group discussions, peer editing, reflective responses to questions, or other activities as appropriate. Several of the activities will help you work toward the research proposal and group research activity. You must submit the activities prior to the following class session.

*Statistics Exam* (60 points)

This is a take-home open-book individual exam. Data sets in SPSS are provided and used for the exam analyses. You will determine the appropriate analyses to run based on given information, carry out appropriate analyses, and report results. Scoring criteria are included on the test. You will have one week to complete the exam and submit responses to Blackboard.

*Final Exam* (50 points)

This is a take-home open-book individual exam. It will include essay questions related to quantitative research methods and analyses. You will have one week to submit your responses to Blackboard.

**GRADING POLICY**

Earned points will be summed across the assignments and exams, and will result in the following grades:

	A: 279-300	A-: 269-278
B+: 263-268	B: 249-262	B-: 239-248
C+: 233-238	C: 219-232	C-: 209-218

Grades lower than C- will be granted when points justify that grade. See the student handbook with regard to acceptable grades within the program.

## **OUTLINE OF WEEKLY ACTIVITIES**

\*Check Blackboard for reading assignment each week.

Note that most of the major assignments are due in December. There is a practical reason for clustering due dates at that time. Be aware, however, that it is in your best interest to begin the assignments earlier in the semester and make progress throughout the term.

<b>Date</b>	<b>Topic(s)</b>	<b>Lab Activity</b>	<b>Due</b>
<b>9/9</b>	Research Design, Measurement, and Analysis Overview	Data Entry, Variables	
<b>9/16</b>	Standard Deviation, Correlation	Descriptive Statistics, Graphing	Online activity 1
<b>9/23</b>	Variables, Hypothesis Testing, Statistical Inference	Correlations and Simple Linear Regression	Lab 1
<b>9/30</b>	Surveys, Sampling, and Meta-analyses	Comparing Means	Lab 2 Online activity 2
<b>10/7</b>	Categorical Variables Uses and Limitations of Nonparametric Univariate Statistics	Comparing More Means	Lab 3
<b>10/14</b>	Experiments and Random Assignment, Reliability and Validity	Non-Parametric Statistics	Lab 4 Online activity 3
<b>10/21</b>	Using and Interpreting Regression Analysis	Statistics Review	Lab 5
<b>10/28</b>	Advanced Methods for Analyzing Categorical Variables	Multiple Regression	Lab 6 Online activity 4
<b>11/4</b>	Factor Analysis	Discriminate Analysis	Lab 7 Online activity 5
<b>11/11</b>	No classes on Veteran's Day; Campus is closed.		
<b>11/18</b>	Multilevel Modeling	Factor Analysis	Lab 8 Online activity 6
<b>11/25</b>	Instrument Design and Use	Multilevel Modeling	Lab 9
<b>12/2</b>	Group Research Presentations	Instrument Reliability	Lab 10 <b>Group Research Activity</b>
<b>12/9</b>	Group Research Presentations	No lab	Lab 11 (should be able to finish in class 12/2) <b>Statistics Exam Research Proposal<sup>1</sup></b>
<b>12/16</b>	<b>Final Exam</b> (due in Blackboard by 5pm); no class meeting		

<sup>1</sup>The Research Proposal may be submitted through midnight on 12/12; however NO proposal submissions will be accepted after that date and time. You are encouraged to submit the research proposal earlier to better manage your time over the last two weeks of the term. Note: The Statistics Exam is due in Blackboard by 5pm on 12/9 as scheduled.